



Verification of the CHMI's Biometeorological Forecast with Use of Medical Data from Emergency Medical Service in Ústí nad Labem

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Introduction

The verification of bioweather is an important way to improve its quality. Czech Hydrometeorological Institute (CHMI) has been publishing Biometeorology Forecast (BMF) for the Czech Republic since 1993. The BMF is calculated from basic meteorological characteristics (air temperature, humidity, vertical profile of air temperature, occurrence of selected meteorological phenomena) and circulatory factors (described by the changes of air-masses).

Data and methods

The BMF is composed of load rate (with a scale 1-3) and of related text (loading factors and medical advice). A load rate is determined by a value of the biotropy index (weighted sum of forecasted particular factors). For the verification were used the values of the load rate and of the biotropy index .

The medical data were obtained from Emergency Medical Service (EMS) of the Ústecký Region in Ústí nad Labem (northern Bohemia). The original database of the medical data included information about all of the emergency actions. These data were cleansed from scheduled actions, actions for women in childbed and actions by other centres than Ústí nad Labem city.

Both kinds of data (BMF and medical) were analyzed for 5year period (2009-2013). The selection was defined by the length of available daily medical data from EMS. The data were statistically processed two times. At first forecasted BMF values were processed and than the same was done for evaluated BMF data (cleansed from meteorological forecasting errors).

Conclusions

The results show relations between the forecasted BMF values (and the evaluated ones from real meteorological data) and urgent EMS actions and relations between the forecasted BMF values and the evaluated ones.